STATE OF VERMONT
AGENCY OF TRANSPORTATION
133 State Street, Administration Building
Montpelier, Vermont 05633-5001

MAR 8 1996

March 6, 1996

Mr. Jason Feingold, Environmental Engineer
Hazardous Materials Management Division
Agency of Natural Resources
Waterbury Complex, Waterbury

Dear Jason:

Subject: A.O.T. Central Garage Sites

Please find attached a site investigation report on the Agency of Transportation Central Garage Complex in Berlin, Vermont. Once you have reviewed the report it might be beneficial to have a meeting at your convenience to go over additional testing and remediation options. Please feel free to call me at 828-2797 or Alan McBean at 878-3485 with any questions. Thank you.

Sincerely,

Michael B. Morissette
Hazardous Materials & Waste Coordinator

MBM/pw
Enc:

H
N N

Nelson, Heindel, and Noyes

• Consulting Hydrogeologists
• Engineers
• Environmental Scientists

P.O. Box 64709 Burlington, Vermont 05406-4709 802-658-0820
FAX: 802-860-1014

VERMONT AGENCY OF TRANSPORTATION
CENTRAL GARAGE
Berlin, Vermont

Prepared by:

Nelson, Heindel, and Noyes

Prepared for:

VERMONT AGENCY OF TRANSPORTATION

February 20, 1996

VERMONT AGENCY OF TRANSPORTATION
CENTRAL GARAGE
Berlin, Vermont

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VERMONT AGENCY OF TRANSPORTATION
CENTRAL GARAGE
Berlin, Vermont

1.0 INTRODUCTION

In September 1995, excavation for the emplacement of concrete footings at the Agency of Transportation Central Garage complex uncovered a 55 gallon drum and petroleum contaminated soil. A composite soil sample was collected on September 19, 1995 and found to contain significant quantities of volatile and semi-volatile organic compounds, as well as some heavy metals. A test for PCB's and pesticides was negative. A site meeting was held on November 20, 1995 and it was determined to install six monitoring wells to determine the nature and extent of soil and groundwater contamination.

On November 29, 1995 and December 1, 1995 the monitoring wells were installed. Soil samples were taken during installation of the wells, and water samples were collected on December 7, 1995. The wells were surveyed and a site map prepared by the Agency of Transportation Materials and Research Division. This information was forwarded to Nelson, Heindel and Noyes on December 21, 1995. This report summarizes the results of the investigation and presents an overview of remedial activities associated with underground storage tanks (UST's) which have occurred at the Central Garage in the past.

2.0 SITE DESCRIPTION AND BACKGROUND

2.1 Site Location and Physiography

The site is located in Berlin Vermont on the east side of Route 302 (Appendix 1, page 1). The property is further delineated by the Stevens Branch to the east and Partridge Road to the south. The Berlin Pond Brook crosses the south end of the property and joins the Stevens Branch just south (upstream) of the contaminated site. The site is relatively level and has been constructed by filling over lacustrine deposits associated with glacial Lake Vermont and modern alluvium of the Stevens

Branch (see orthophoto, Appendix 1, page 5). ~~The site is flood~~ prone ~~and erosion of the property during high~~ water has been a ~~problem in the past~~.

2.2 Existing Environmental Threats

Route 302 between Montpelier and Barre, Vermont is the site of numerous activities which potentially could, or have, impacted water quality in the Stevens Branch and groundwater flowing through the AOT property (see County and Local Threat Maps, Appendix 1, pages 2 - 3). Included are gas stations, fuel storage facilities, auto repair businesses, and other industrial sites. Coal tar from a site on Granite Street in Barre is impacting the Stevens Branch, and on numerous occasions employees of the AOT have observed petroleum sheens on the Berlin Pond Brook. Immediately upgradient of the Central Garage site are two UST locations with known residual contamination. ANR Site #8634508 is a garage on the west side of Route 302 owned by Mr. Randy Rouleau where a 2000 gallon gasoline tank and a 5000 gallon fuel oil tank were removed in 1986 and 1987, respectively. The second site is on the Central Garage Property where a 10,000 gallon No. 6 fuel oil tank was abandoned in 1991 (ANR Site #91-1063). In 1993 a letter to the AOT from Richard Spiese, ANR Sites Coordinator, indicates a preliminary finding that some of the contamination associated with Site #91-1063 is coming from off-site sources.

2.3 Site History

The Town of Berlin Land Records indicate that the Agency of Transportation purchased the Central Garage property from Thomas Neal in 1919. The garage currently used for maintenance was constructed in 1952; the Materials and Research laboratory was added in 1961. The main garage has been in continuous operation as the central maintenance facility for the Agency since 1952 and, to a lesser degree, prior to that date. There have been UST's for No. 6 fuel oil and gasoline in the past and there are currently UST's for No. 2 fuel oil and diesel fuel. Past and present activities at this site include vehicle maintenance, engine rebuilding, auto body work, painting, and a machine shop. The Materials and Research laboratory, located at the south end of the property, has used several solvents for asphalt extraction, including trichloroethylene and xylene.

3.0 METHODS OF INVESTIGATION

The objective of the subsurface investigation was to determine the nature and extent of contamination associated with the drum(s) found during excavation for a concrete footing. The investigation included soil borings and monitoring well installation, sampling and laboratory characterization of soil and groundwater, and a site survey. Each activity is detailed below.

3.1 Monitoring Well Installation

Six monitoring wells were installed to determine water quality in the vicinity of the soil contamination and to determine the extent of the contaminant plume. Monitoring well MW-1 was placed using eight inch hollow stem augers (HSA) and split spoon samples were taken every five feet.

Monitoring well MW- 2 was started using HSA's but the hole could not be advanced past 11 feet. A change was made to 4.25 inch solid stem augers (SSA) and the hole was completed with no additional split spoon samples taken below 11 feet. Monitoring well No. 3 was placed using SSA's and soil samples were taken off the auger flights. Monitoring wells WQ-1, WQ-2 and WQ-3 were placed manually using a bucket auger. Monitoring well No. 1 and possibly No. 2 are upgradient wells while the remaining four wells are all down gradient from known areas of contamination. Wells WQ-1 through 3 are at the bank of the Stevens Branch to assess water quality leaving the site. A ground water contour map is included in Appendix 1 (page 4) and soil boring logs and monitoring well construction diagrams are included in Appendix 2 (pages 1 - 3, and 4 - 6, respectively).

3.2 Soil Screening and Sampling

Split spoon samples were taken at five foot intervals during the installation of monitoring well No. 1 and to a depth of 11 feet in monitoring well No. 2. Composite samples were taken off the auger flights on the remaining holes and separated by soil type, moisture content, and degree of contamination. The samples were placed in plastic bags, sealed, and allowed to equilibrate prior to head space screening with an H-Nu Systems, Inc., Model PI 101 photoionization detector (PID) equipped with a 10.2 eV UV lamp. The PID was calibrated each day with a 100 ppm isobutylene span gas.

Based on the PID screening results, a soil sample was selected from the well boring WQ-2 and submitted for analysis by EPA Method 8260 to determine volatile organic compound (VOC) content and EPA Method 8100 for determination of semi-volatile organic compound (SVOC) content. The results of the soil testing can be found in Appendix 3 and are discussed in section 4.3.

3.3 Groundwater Sampling

Groundwater samples from MW-1, MW-2, MW-3, and WQ-2 were submitted for analysis on December 7, 1995 by EPA methods 8260 (VOCs), modified Method 8100, Total Petroleum Hydrocarbons (TPH), and 3010/3020 (Heavy Metals).

The number of samples taken is in keeping with an agreement reached during the site meeting November 20,1995, where it was determined that one upgradient sample and three down gradient samples would be analyzed. The results of the water testing can be found in Appendix 3 and are discussed in Section 4.3.

4.0 INVESTIGATION RESULTS

4.1 Site Stratigraphy and Hydrogeology

The soils encountered during the site investigation can be divided into three horizons. The uppermost unit consists of brown, fine- to medium-grained gravel and gravelly sand. This unit appears to be fill brought in to level the property near the river's edge. The fill layer is 5 to 10 feet thick and thickens toward the river. The middle unit is composed of brown and brown/black mottled sand, silty sand, and discontinuous gravel layers. This horizon represents modern fluvial deposits associated with the migration of the Stevens Branch channel. The unit is 6 to 10 feet thick and may be completely absent in some areas due to flood erosion and replacement with fill. The deepest material encountered is comprised of grey silt and clayey silt representative of lacustrine deposits from glacial Lake Vermont. The zone of highest contaminant concentrations occurs at a depth of approximately 10 feet in monitoring well No. 3 which is just above the phreatic surface near the transition from sand and gravel to siltier soils.

The groundwater contour map (Appendix 1, page 4) reveals an irregular phreatic surface in the vicinity of the contaminated area. This could be the result of flood scour removing the native material and the replacement fill having a higher hydraulic conductivity. The result is a northeasterly flow direction of groundwater, toward the river with a horizontal gradient of 0.05 ft/ft (MW-1 to MW-3). The gradient appears to be somewhat steeper in the vicinity of well WQ-3, suggesting an absence of the more conductive fill materials or perhaps an aquitard within the fill creating a damming effect. Without more detailed soil sampling at this location, it is difficult to reach a conclusion as to the cause of the gradient change.

4.2 Contaminant Distribution

4.2.1 Soil

During the soil boring program, split-spoon and composite samples were field screened with a PID. The results are included on the annotated soil boring logs in Appendix 2 (pages 1 to 3), and are summarized in Table 1 below. Based on the field screening results, samples were submitted for laboratory characterization of semivolatile organic compounds (EPA Method 8100) and volatile organic compounds (EPA Method 8260). The laboratory testing results are also summarized in Table 1.

TABLE 1
SOIL ANALYTICAL RESULTS
VOCs AND SVOCs

Sample Location	PID Range (ppm)	Total PAHs (mg/kg)	Total VOCs (mg/kg)
MW-1	Background	NA[1]	NA
MW-2	Background	NA	NA
MW-3	<1 - 22	NA	NA
WQ-1	0.2 - 1.8	NA	NA
WQ-2	0.4 - 34	9.4	6.1
WQ-3	0.4	NA	NA

[1] Not analyzed

Field screening of soil samples from borings MW-1, MW-2, WQ-1, and WQ-3 revealed VOC concentrations at or slightly above background. PID

concentrations in boring MW-3 ranged from less than 1 to 22 ppm. Similarly, headspace concentrations for samples from WQ-2 ranged from 0.4 to 34 ppm.

A soil sample from WQ-2 (3.5' - 4.0' below grade) was submitted for laboratory analysis by EPA Methods 8100 and 8260. The laboratory analytical results are included in Appendix 3 (pages 1 to 8). The sample contained virtually every Method 8100 target compound in concentrations ranging from approximately 100 to 1700 μg/kg; the total PAH content of the sample was 9.4 mg/kg. The VOC analysis revealed the presence of napthalene (1,800 ppb), xylenes (691 ppb) and several target alkylated benzenes in concentrations ranging from traces to 2,010 ppb. More than ten non-target compounds, tentatively characterized as aliphatic hydrocarbons, alkylated benzenes, and PAHs, occurred in concentrations between 200 and 2,500 ppb. The laboratory results are consistent with the observation of sheens on saturated soil and groundwater in the WQ-2 boring.

The 3.5' - 4.0' interval from the WQ-2 boring also was characterized for total RCRA metals. The laboratory analytical reports are included in Appendix 3 (pages 9 to 13). The results are compiled in Table 2 below.

TABLE 2
SOIL ANALYTICAL RESULTS TOTAL METALS

Parameter	WQ-2 (3.5' - 4.0') (mg/kg)	Background Range[1] Eastern United States (mg/kg)
Arsenic	27.5	0.1 - 7.3
Barium	55.4	10 - 1,500
Cadmium	0.870	NA[2]
Chromium	31.7	1 - 1,000
Lead	35.1	<10 - 300
Mercury	1.81	0.01 - 3.4
Selenium	ND[3]	<0.1 - 3.9
Silver	ND	NA

[1] Background ranges obtained from Shacklette, H.T. and Boerngen, J.G. (1984), Element Concentrations in Soils and Other Surficial Materials of the Conterminus United States, U.S. Printing Office.
[2] Not available
[3] Not detected

Six of the eight RCRA metals were detected in the sample. However, the concentrations of these metals are well within the ranges observed in soils of the eastern United States, and are not evidence of heavy metal contamination.

Arsenic ?

4.2.2 Groundwater

Monitoring wells MW-1, MW-2, MW-3, and WQ-2 were sampled for laboratory characterization of VOCs, TPH, and total metals. The laboratory analytical reports are presented in Appendix 3 (pages 14 to 38). The VOC and TPH results are compiled below in Table 3.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
VOLATILE ORGANIC COMPOUNDS AND TPH

Parameter	MW-1 (µg/L)	MW-2 (µg/L)	MW-3 (µg/L)	WQ-2 (µg/L)	Enforcement Standard (µg/L)
Benzene	ND [1]	TBQ [2]	5.8	63.4	5.0
Sec-Butylbenzene	ND	ND	TBQ	3.3	- [3]
Chlorobenzene	5.4	ND	ND	ND	100
Ethylbenzene	ND	ND	15.3	40.4	680
Isopropylbenzene	ND	ND	2.7	6.3	-
p-Isopropyltoluene	ND	ND	3.6	9.5	-
Napthalene	ND	ND	42.4	122	20 ppb VHA
n-Propylbenzene	ND	ND	6.0	11.1	-
Tetrachloroethene	TBQ	2.2	ND	ND	0.7
Toluene	ND	3.9	10.8	8.4	2420
Trichloroethene	ND	TBQ	ND	ND	5.0
1,2,4-Trimethylbenzene	ND	ND	48.1	96.2	-
1,3,5-Trimethylbenzene	2.1	ND	19.4	35.4	-
Xylenes	2.0	5.1	84.4	155	400
Unidentified Peaks	9	>10	>10	>10	-
TPH (mg/L)	ND	TBQ	TBQ	1.9	-

[1] Not detected
[2] Trace below quantitation limit
[3] No standard established

Volatile organic compounds occurred in each of the monitoring wells. The vast predominance of the contaminant distribution is dominated by alkylated benzenes and other hydrocarbons associated with gasoline. Several unidentified, non-target compounds were observed in each sample. These compounds have been tentatively characterized as aliphatic hydrocarbons, alkylated benzenes, and PAHs. The presence of BTEX and alkylated benzenes, typically associated with gasoline, and aliphatic hydrocarbons and PAHs, consistent with a diesel fuel or waste oil source, confirms the influence of two distinct petroleum sources. The presence of chlorobenzene may reflect a gasoline or, alternatively, paint source.

In addition to petroleum hydrocarbons, the chlorinated hydrocarbons tetrachloroethene (PCE) and trichloroethene (TCE) were detected in MW-1 (PCE = TBQ) and MW-2 (PCE = 2.2 ppb; TCE = TBQ). Historically, operations at the Central Garage site reportedly have included TCE extraction of asphalt; it is conceivable that PCE also was employed as an extraction solvent. The TCE and PCE probably come from an upgradient source within the Central Garage complex. TCE and 1,1,1-trichloroethane have been detected on the Central Garage property in the vicinity of the former fuel oil tanks.[1]

Vermont Groundwater Enforcement Standards for volatile organic compounds were exceeded in MW-2 (PCE), MW-3 (benzene), and WQ-2 (benzene).

Groundwater samples also were submitted for laboratory analysis of eight RCRA metals. The laboratory analytical results are included in Appendix 3 (pages 31 to 38). The analytical results are tabulated below.

[1] Wagner, Heindel, and Noyes, Inc. (1991) letter report from Dean Grover to Michael Morissette (ANR), July 22, 1991.

TABLE 4
GROUNDWATER ANALYTICAL RESULTS
TOTAL METALS

Parameter	MW-1 (mg/L)	MW-2 (mg/L)	MW-3 (mg/L)	WQ-2 (mg/L)
Arsenic	ND[1]	ND	ND	0.010
Barium	0.090	0.133	0.123	0.162
Cadmium	ND	ND	ND	ND
Chromium	ND	ND	ND	ND
Lead	0.002	0.009	ND	0.003
Mercury	ND	ND	ND	ND
Selenium	ND	ND	ND	ND
Silver	ND	ND	ND	ND

[1] Not detected

Barium occurred in all four monitoring wells in concentrations ranging from 0.090 to 0.162 mg/L. Lead, which was present in MW-1, MW-2, and WQ-2, ranged from 0.002 to 0.009 mg/L. Arsenic was detected at 0.010 mg/L in WQ-2. The concentrations of total barium, lead, and arsenic observed probably are derived from the digestion of fine particulate material or organic complexes. Nevertheless, the concentrations of total metals are below the enforcement standards established for the corresponding dissolved metals.

5.0 SENSITIVE RECEPTOR SURVEY

The contamination at the Central Garage site has the potential to impact both human and environmental receptors. The primary route of human exposure would be contact with water in the Stevens Branch immediately downstream from the site. Since the contamination is not exposed at the ground surface, and PID readings were relatively low, it is unlikely that inhalation would be a significant exposure risk. Therefore, dermal exposure through contact with the water or ingestion of fish impacted by the pollution would be the primary routes of exposure. Since the levels of contamination are relatively low and the dilution factor is high, the risk of human exposure is considered negligible. The primary environmental receptor is the Stevens Branch. This is of some concern due to the proximity of the contamination to the river. Benzene contamination in excess of the

enforcement standards is present at the water's edge in WQ-2, and therefore is entering the river.

6.0 CORRECTIVE ACTION ALTERNATIVES

The limited aerial extent of the contamination, and the possibility that additional drums may be present, suggest that the most effective remedial alternative would be excavation with the contaminated soils treated above ground. Excavation would permit a thorough investigation of the site for the presence of additional drums, as well as removal of the pollution source. Excision of the source should improve the quality of groundwater entering the Stevens Branch at this location. Once the material is removed and the site backfilled, additional monitoring wells could be installed to confirm the effectiveness of the cleanup effort.

7.0 CONCLUSIONS AND RECOMMENDATIONS

- There is a potential for upgradient pollution sources to contribute to the contamination found at this site. Upgradient well MW-1 contained PCE (trace), chlorobenzene (5.4 ppb), 1,3,5-trimethylbenzene (2.1 ppb), and xylenes (2.0 ppb).

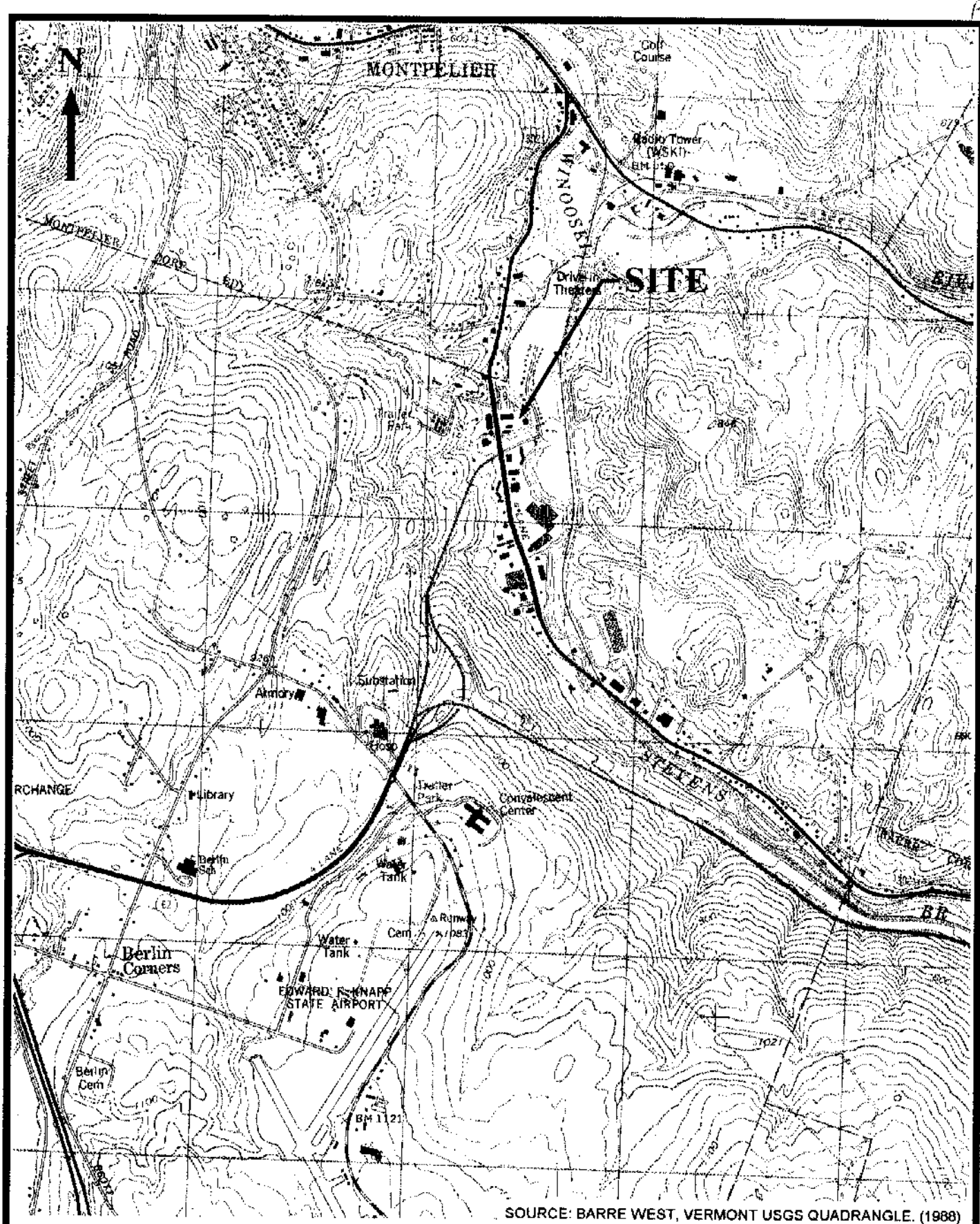
- The contaminant plume occurs in an area approximately 50 feet square and to an estimated depth of 12 feet. Deeper penetration is unlikely due to the lacustrine sediments at depth and hydrogeologic environment of the site (discharge zone).
- The contamination is known to be entering the Stevens Branch in the vicinity of well WQ-2 through groundwater discharge. Sheens were observed on saturated soils and groundwater from the MW-2 boring.

- The contamination appears to be a mixture of gasoline and/or diesel fuel and waste oils.

- Since contamination is entering the Stevens Branch in quantities above the enforcement standards, it is recommended that remediation begin as soon as possible.

- Due to the possible presence of additional drums and the mixture of petroleum contaminants, excavation will be the most effective means of removing the pollutants from the site and ensuring that no additional drums remain undetected.

[U:\AMCBEAN\WPDOCS\AOTCENTR R1]



SOURCE: BARRE WEST, VERMONT USGS QUADRANGLE. (1988)

AOT CENTRAL GARAGE

BERLIN, VERMONT

SITE LOCATION MAP

SCALE: 1"=2000'

FILE: C:\AOTCENT\SITEMAP

DATE: JANUARY 31, 1996

PROJECT #: 95279

DRAWN BY: M. Luman

PROJ. MGR: A. McBean

APPROVED BY: J. Noyes

Nelson, Heindel, and Noyes

• Hydrogeology • Ecology •

• Environmental Engineering •

CONSULTING SCIENTISTS AND ENGINEERS

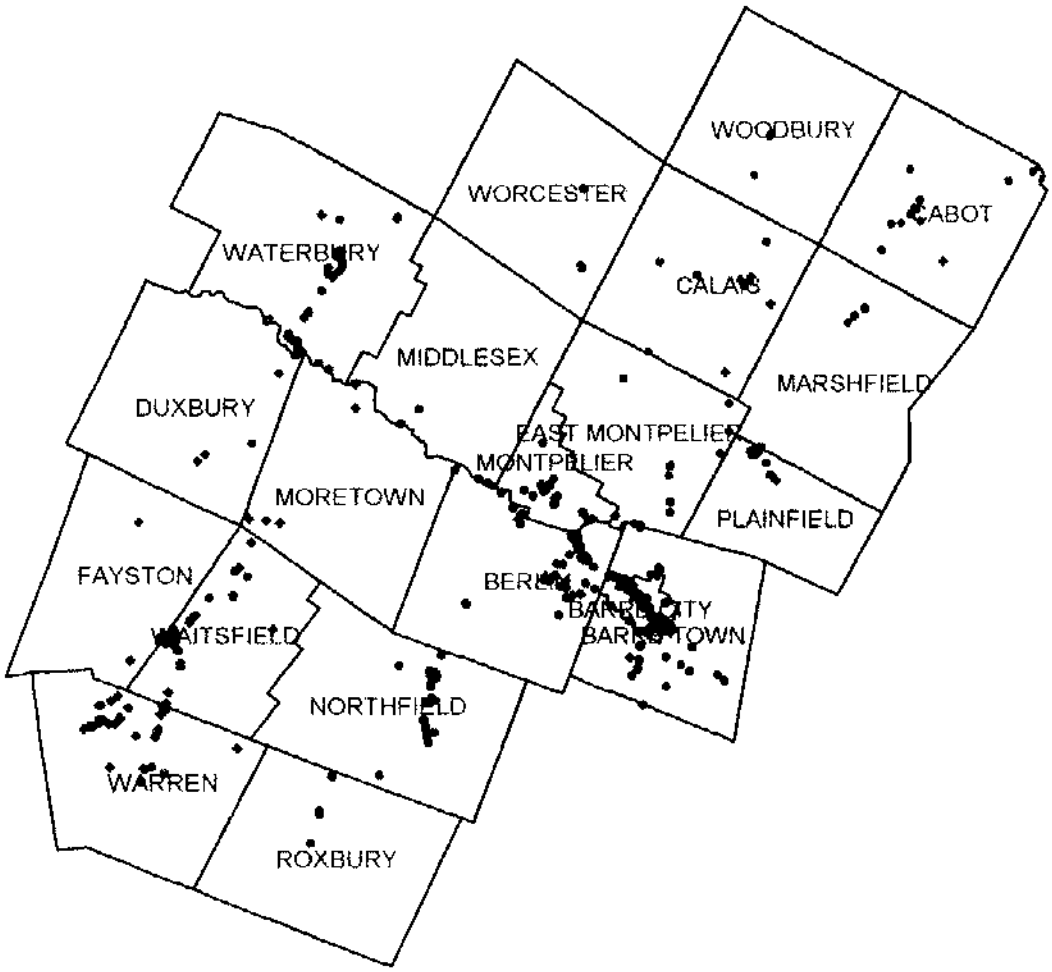
P.O. BOX 64709

BURLINGTON, VERMONT 05406-4709

Prepared By:

Information & Visualization Services

Environmental Hazards and Locations with Test Data in Washington County, Vermont



- INTERIM STATE DESIGNATED HAZARDOUS WASTE SITE. (1994)
- SITE SPECIFIC DATA AVAILABLE. (CURRENT)
  NOT NECESSARILY INDICATIVE OF AN ENVIRONMENTAL HAZARD.
- POTENTIAL GROUNDWATER POLLUTION SOURCE. (1980)
  (IE. LANDFILL, INDUSTRIAL WASTE, FARMING, SALT, JUNK YARD, ETC)

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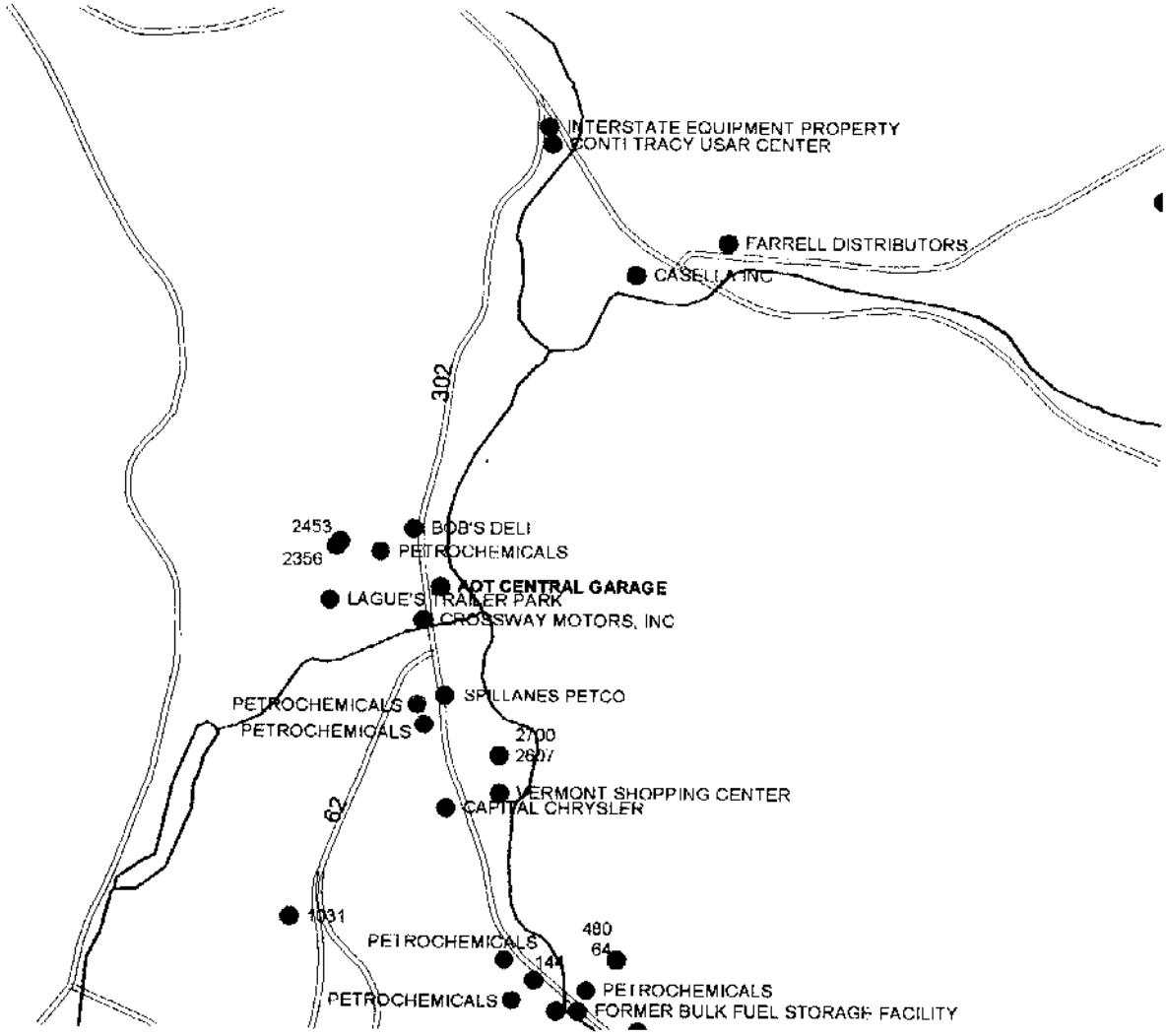
INFORMATION & VISUALIZATION SERVICES

Environmental Hazards and Locations with Test Data Surrounding AOT Garage of Berlin, VT



- INTERIM STATE DESIGNATED HAZARDOUS WASTE SITE. (1994)
- SITE SPECIFIC DATA AVAILABLE. (CURRENT)
  NOT NECESSARILY INDICATIVE OF AN ENVIRONMENTAL HAZARD.
- POTENTIAL GROUNDWATER POLLUTION SOURCE. (1980)
  (IE. LANDFILL, INDUSTRIAL WASTE, FARMING, SALT, JUNK YARD, ETC)

N

NOTE:
TEST DATA SITES INDICATE INVESTIGATIONS OF AN ECOLOGICAL, HYDROLOGICAL, OR PLANNING NATURE

INFORMATION & VISUALIZATION SERVICES
P.O. Box 64709 - Burlington, Vermont - 05406-4709 Tel: (802) 865-0437 - Fax: (802) 860-1014 - Email: IVSBURL@AOL.COM

WELL NUMBER	GROUND ELEV. (FT)	TOP OF CASING ELEV. (FT)	B.T.O.P. (FT)	WATER TABLE ELEV. (FT)
WQ-1	535.01	538.83	6.87	531.96
WQ-2	534.16	537.36	5.43	531.93
WQ-3	539.29	543.34	9.98	533.36
MW-1	542.81	544.20	9.69	534.51
MW-2	543.17	545.09	11.48	533.61
MW-3	542.85	544.17	12.31	531.86

BM #LAB, EL. 542.60' located on Partridge Rd. at entrance to VAOT Materials & Research Parking Lot

WQ-3
533.36
RIVER
531.93
WQ-2
STALLS
533.61
MW-2
MW-3
531.86
EXCAVATED AREAS
531.96
WQ-1
RIVER
532
533
534
MW-1
534.51
MAINTENANCE STORAGE SHED
TIRE STORAGE SHED
RIVER
PUMP ISLAND
CENTRAL GARAGE BUILDING
HAZ-MAT SHED
SIGN SHOP
RIVER

DRAWN BY: M. Luman
APPROVED: J. Noyes

PROJECT NO. 95279
FILE: C:\AOTCENT\GARAGE

Wagner, Heindel, and Noyes, Inc.
CONSULTING SCIENTISTS AND ENGINEERS
• Hydrogeology • Ecology •
• Environmental Engineering •
P.O. BOX 64709 BURLINGTON, VERMONT 05406-4709

AOT CENTRAL GARAGE
BERLIN, VERMONT

WATER TABLE CONTOUR MAP - 12/7/95

SCALE: 1"=40'
DATE: JANUARY 31, 1996

SOURCE: ORTHOPHOTO 1:5000 SHEET # 148192. (1979)

AOT CENTRAL GARAGE

BERLIN, VERMONT

ORTHOPHOTO SITE PLAN

SCALE: 1"=150'

FILE: C:\AOTCENT\ORTHO

DATE: FEBRUARY 20, 1996

PROJECT NO. 95279

DRAWN BY: M. Luman

PROJ. MGR: J. Silfer

APPROVED: J. Noyes

☐ DRAFT ☒ FINAL

Nelson, Heindel, and Noyes

• Hydrogeology • Ecology •
• Environmental Engineering •
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Prepared By:
Information & Visualization Services

SOIL BORING LOG

WAGNER, HEINDEL & NOYES, INC. P.O. BOX 64709 BURLINGTON, VT 05406-4709	Project: AOT Central Garage	Boring Number: MW-1 Sheet 1 of 1 Project Number: 95279

Boring Company: VT AOT
Foreman: R. Holt
WH&N Staff: A. McBean

Boring Location: Northeast corner of shed
Ground Elevation:
Date Started: 11/29/95 Date Ended: 11/29/95

Auger	Sampler	Groundwater Readings
Size: 8" hollowm stem	Type: SS Other: _____	Date / Depth / Cashin / Stabil. Time
Hammer:_____	Hammer: 140#	12/04/95 / TOC 9.81 / /
Fall: _____	Fall: 30"	

Sample				Sample Description	Stratra Change & General Description	Field Testing PID	Equipment or Well Installed
No.	Rec.	Depth	Blows				
1		0 -0. 2		Pavement			
2		0.2 - 3		Brown, m, gr	fill	Bkgrnd 0.4	See
3		3 - 6		Brown, m, sa		Bkgrnd 0.4	Well
4	1.2'	5 - 7	7, 4, 3, 3	Brown, m, sa		Bkgrnd 0.4	Log
5		6 - 10		Brown, mtw, sa, sl sa	fluvial	Bkgrnd 0.4	
6	0.8'	10 - 12	3, 3, 7, 7	Brown, mtw, sisa, and br/blk, w, gr	gravel layer at 9.0' to 11.0'	Bkgrnd 0.4	
7		11 - 15		Brown, mtw, sisa		Bkgrnd 0.4	
8	1.0'	15 - 17	7, 4, 6, 8	Grey, w, si	lacustrine	Bkgrnd 0.4	
9	2.0'	20 - 22	2, 2, 3, 6	Grey, mtw, clsi		Bkgrnd 0.4	

Proportions Used
Trace: 0 to 10%
Little: 10 to 20%
Some: 20 to 35%
And: 35 to 50%

Penetration Resistance
140 lb wt falling 20" on 2" O.D. Sampler

Cohesioniess Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Stiff
		31+	Hard

Well Construction Legend

Concrete	Bentonite
Grout	Silica Sand
Backfill	Bedrock

(U:\AMCBEAN\WPDOCS\AOTCENTR.SL1)

SOIL BORING LOG

WAGNER, HEINDEL & NOYES, INC. P.O. BOX 64709 BURLINGTON, VT 05406-4709	Project: AOT Central Garage	Boring Number: MW-2 Sheet 1 of Project Number: 95279

Boring Company: VT AOT
Foreman: R. Holt
WH&N Staff: A. McBean

Boring Location: Edge of river
Ground Elevation:
Date Started: 11/29/95 Date Ended: 12/01/95

Auger
Size: 8" hs / 4.25" ss Type: SS
Hammer: _____
Fall: _____

Sampler
Other: _____
Hammer: 140#
Fall: 30"

Groundwater Readings

Date	Depth	Cashin	Stabil. Time
12/04/95	TOC 11.6"		

Sample				Sample Description	Stratra Change & General Description	Field Testing PID	Equipment or Well Installed
No.	Rec.	Depth	Blows				
1	1.0'	0 - 2	6,9,10,11	Brown, m, gr sa (fill)	fill	Bkgrnd. 0.4	See
2		0 - 5		Brown, m, gr sa		0.4	Well
3	0.8'	5 - 7	5,5,6,6	Brown, m, sa, with gr layers		0.4	Log
4		6 - 10		Brown, m, sa, with stones		0.4	
5		10 - 12	1,1,R	Brown, mtw, sa	*refusal at 11.9'	0.4	
*switch to solid stem to adavnce boring							
6		12 - 20		Grey, w, cl si	lacustrine	0.4	

Proportions Used
Trace: 0 to 10%
Little: 10 to 20%
Some: 20 to 35%
And: 35 to 50%

Penetration Resistance
140 lb wt falling 20" on 2" O.D. Sampler

Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Stiff
		31+	Hard

Well Construction Legend

Concrete	Bentonite
Grout	Silica Sand
Backfill	Bedrock

(U:\AMCBEAN\WPDOCS\AOTCENTR.SL1)

SOIL BORING LOG

WAGNER, HEINDEL & NOYES, INC. P.O. BOX 64709 BURLINGTON, VT 05406-4709	Project: AOT / Central Garage	Boring Number: MW #3 Sheet 1 of 2 Project Number: 95279

Boring Company: VT AOT
Foreman: R. Holt
WH&N Staff: C. Benda

Boring Location: #3 Adjacent to river
Ground Elevation:
Date Started: 12/1/95 Date Ended: 12/1/95

Auger
Size: 4.25 inch
Hammer: _____
Fall: _____

Sampler
Type: _____ Other: _____
Hammer: _____
Fall: _____

Groundwater Readings			
Date	Depth	Cashin	Stabil. Time
12/3/95	TOC 13.8		

Sample				Sample Description	Stratra Change & General Description	Field Testing PID	Equipment or Well Installed
No.	Rec.	Depth	Blows				
1		0 - 5		Brown, medium, sa gr	fill	<1 ppm	see
2		5 - 7		Brown, medium, sa gr		10	well
3		7 - 10		Brown, mtw, sa gr		11	log
4		10 - 13		Dark grey, w, gr sa	fluvial	22	
5		13 - 16		Dark grey, w, gr sa, si		21	
6		16 - 20		Grey, w, si	lacustrine	20	

Proportions Used
Trace: 0 to 10%
Little: 10 to 20%
Some: 20 to 35%
And: 35 to 50%

Penetration Resistance
140 lb wt falling 20" on 2" O.D. Sampler

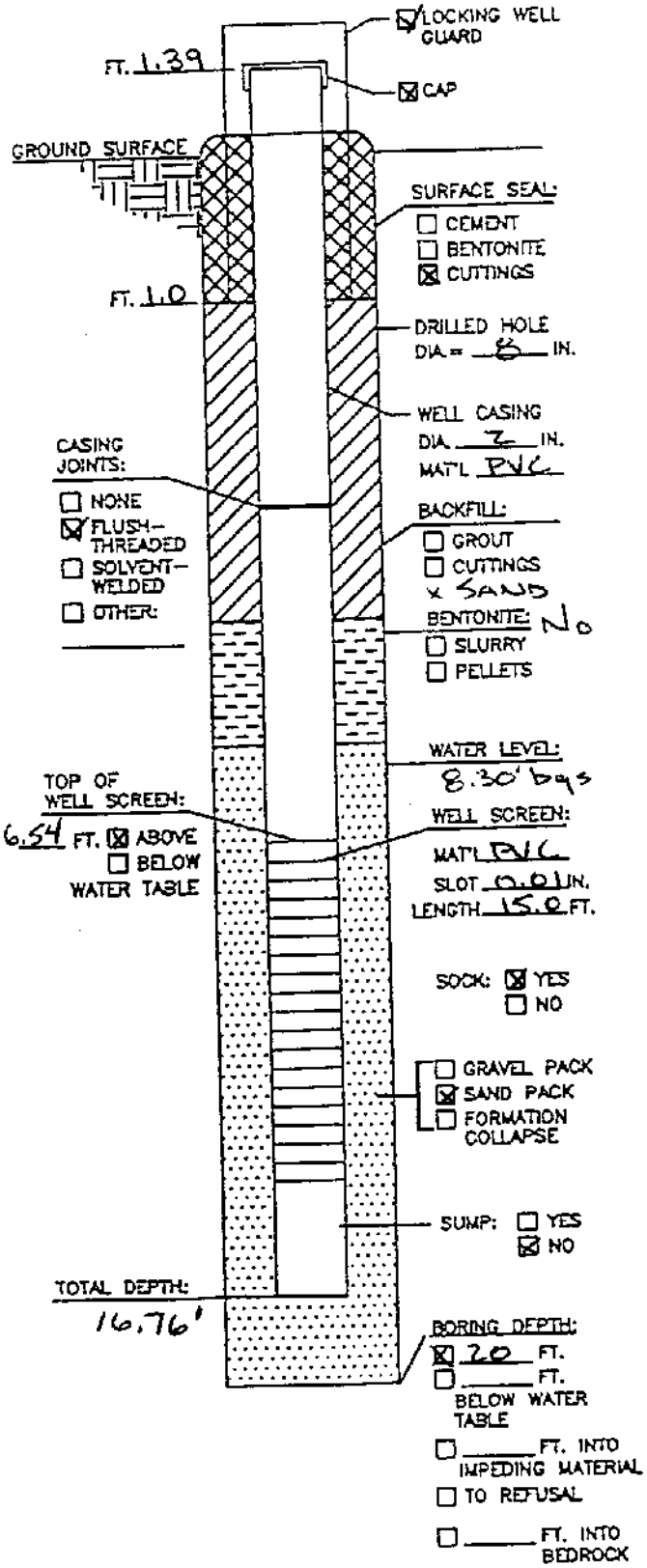
Cohesionless Density		Cohesive Consistency	
0-4	Very Loose	0-2	Very Soft
5-9	Loose	3-4	Soft
10-29	Med. Dense	5-8	M/Stiff
30-49	Dense	9-15	Stiff
50+	Very Dense	16-30	Very Stiff
		31+	Hard

Well Construction Legend

Concrete	Bentonite	0 - 6"
Grout	Silica Sand	
Backfill - Sand	Bedrock	

WELL CONSTRUCTION LOG

WAGNER, HEINDEL, and NOYES, INC.
BURLINGTON, VERMONT



PROJECT AOT - CENTRAL GARAGE

WELL # MW-1

JOB # 95279

TOWN/CITY/STATE BERLIN, VERMONT

INSTALLATION DATE(S) 11-29-95

DRILLING METHOD HOLLOW STEM AUGER (8")

DRILLING FLUID TYPE NA VOLUME ____

DRILLING CONTRACTOR STATE - AOT

WELL DEVELOPED? ☐ YES ☒ NO

IF YES, THEN VOLUME RECOVERED IS ____

IF YES, BY WHOM? ____

DATE: ____

STATIC DEPTH TO WATER 9.69 FT. BELOW TOP OF CASING

☒ MEASURED ☐ ESTIMATED ON DATE: 12-07-95

SPLIT-SPOON SAMPLES? ☒ YES ☐ NO

IF YES, THEN INTERVAL IS 5.0 FT. OR ☐ CONTINUOUS

WELL PURPOSE GROUNDWATER MONITORING

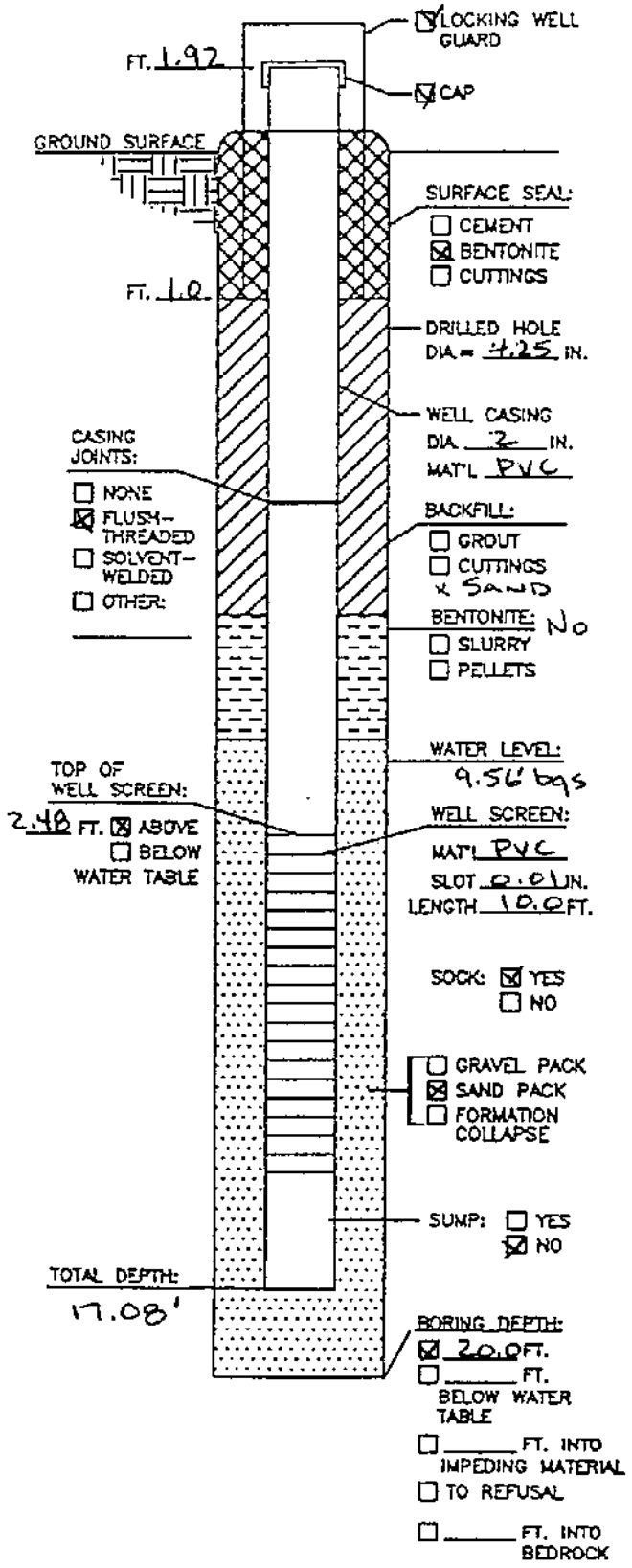
REMARKS THIS IS AN UPGRADIENT WELL. NO CONTAMINATION WAS DETECTED WITH PID.

PREPARED BY A. McBEAN

DATE 12-14-95

WELL CONSTRUCTION LOG

WAGNER, HEINDEL, and NOYES, INC.
BURLINGTON, VERMONT



PROJECT AOT - CENTRAL GARAGE

WELL # MW-2

JOB # 95279

TOWN/CITY/STATE BERLIN, VERMONT

INSTALLATION DATE(S) 12-01-95

DRILLING METHOD SOLID STEM AUGER

DRILLING FLUID TYPE N/A VOLUME

DRILLING CONTRACTOR STATE - AOT

WELL DEVELOPED? ☐ YES ☒ NO

IF YES, THEN VOLUME RECOVERED IS GA

IF YES, BY WHOM?

DATE:

STATIC DEPTH TO WATER 11.48 FT. BELOW TOP OF CASING

☒ MEASURED ☐ ESTIMATED ON DATE: 12-07-95

SPLIT-SPOON SAMPLES? ☒ YES* ☐ NO

IF YES, THEN INTERVAL IS 5.0 FT. OR ☐ CONTINUOUS

WELL PURPOSE GROUNDWATER MONITORING

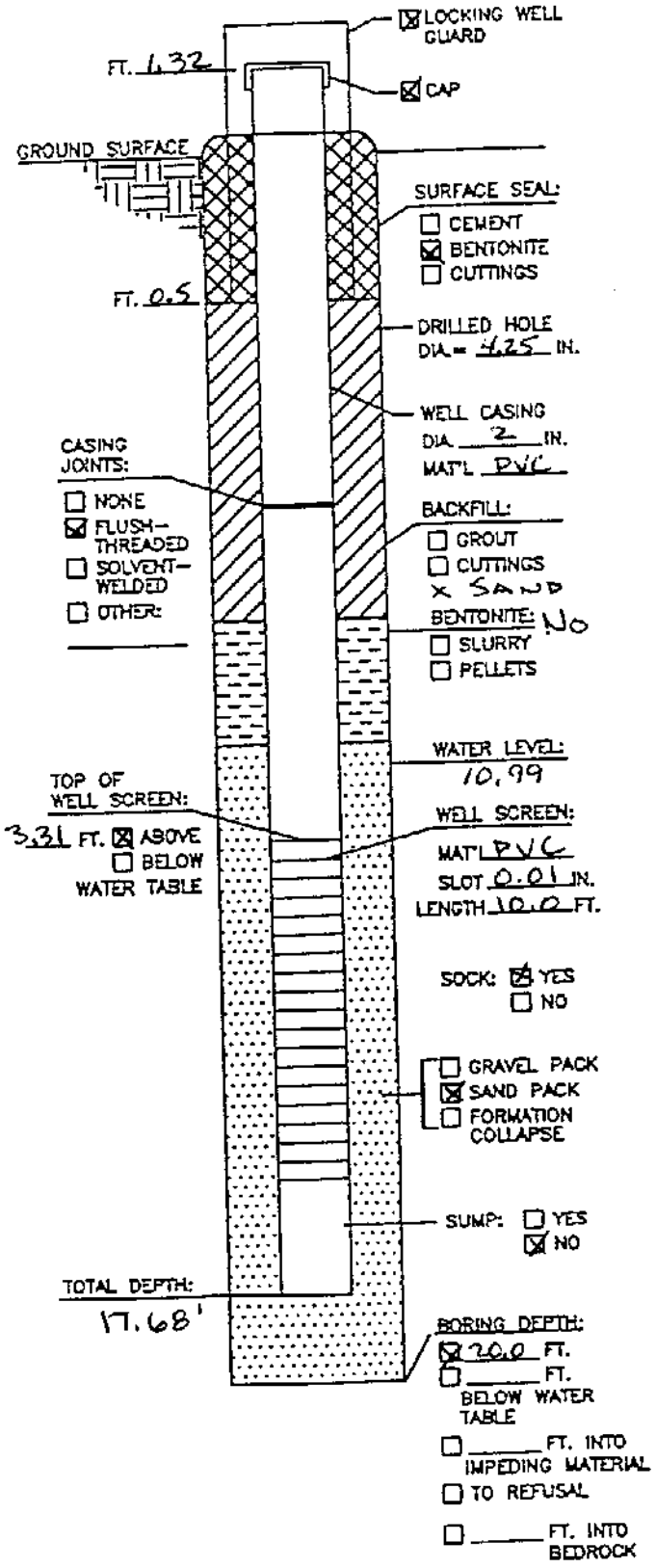
REMARKS * SPLIT SPOON SAMPLES TAKEN IN PREVIOUS ATTEMPTS TO ADVANCE 8" HSA AT THIS LOCATION. COULD NOT ADVANCE HSA PAST 11.0'.

PREPARED BY A. McBEAN

DATE 12-14-95

WELL CONSTRUCTION LOG

WAGNER, HEINDEL, and NOYES, INC.
BURLINGTON, VERMONT



PROJECT AOT - CENTRAL GARAGE

WELL # MW-3

JOB # 95279

TOWN/CITY/STATE BERLIN, VERMONT

INSTALLATION DATE(S) 12-01-95

DRILLING METHOD SOLID STEM AUGER

DRILLING FLUID TYPE NA VOLUME ____

DRILLING CONTRACTOR STATE - AOT

WELL DEVELOPED? ☐ YES ☒ NO

IF YES, THEN VOLUME RECOVERED IS ____ G

IF YES, BY WHOM? ____

DATE: ____

STATIC DEPTH TO WATER 12.31 FT. BELOW TOP OF CASING

☒ MEASURED ☐ ESTIMATED ON DATE: 12-07-95

SPLIT-SPOON SAMPLES? ☐ YES ☒ NO

IF YES, THEN INTERVAL IS ____ FT. OR ☐ CONTINUOUS

WELL PURPOSE GROUNDWATER MONITORING

REMARKS STRONG PETROLEUM ODOR AT 10' BELOW GROUND SURFACE. SEE BORING LOG FOR FIELD TESTING PID RESULTS

PREPARED BY A. McBEAN / C. BENDA

DATE 12-14-95

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
DATE REPORTED: December 14, 1995
DATE SAMPLED: November 29, 1995

PROJECT CODE: HNCG1144
REF. #: 83,538

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated proper sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8260 SOIL MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 14, 1995
DATE SAMPLED: November 29, 1995
DATE RECEIVED: November 29, 1995
ANALYSIS DATE: December 11, 1995

PROJECT CODE: HNCG1144
REF #: 83,538
STATION: WQ-2 (3.5' - 4.0')
TIME SAMPLED: 1100
SAMPLER: C. Aldrich

Parameter	Detection Limit (ug/kg)[1]	Concentration As Received (ug/kg)
Benzene	200	ND[2]
Bromobenzene	200	ND
Bromochloromethane	200	ND
Bromodichloromethane	200	ND
Bromoform	200	ND
Bromomethane	500	ND
n-Butylbenzene	200	ND
sec-Butylbenzene	200	TBQ[3]
Carbon tetrachloride	200	ND
Chlorobenzene	200	ND
Chloroethane	500	ND
Chloroform	500	ND
Chloromethane	1000	ND
(2&4)Chlorotoluene	200	ND
Dibromochloromethane	200	ND
1,2-Dibromo-3-chloropropane	200	ND
1,2-Dibromoethane	200	ND
Dibromomethane	200	ND

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(802) 879-4333
FAX 879-7103

REF #: 83,538

Parameter	Detection Limit (ug/kg)	Concentration As Received (ug/kg)
1,2-Dichlorobenzene	200	ND
1,3-Dichlorobenzene	200	ND
1,4-Dichlorobenzene	200	ND
Dichlorodifluoromethane	1000	ND
1,1-Dichloroethane	200	ND
1,2-Dichloroethane	200	ND
1,1-Dichloroethene	200	ND
cis-1,2-Dichloroethene	200	ND
trans-1,2-Dichloroethene	200	ND
1,2-Dichloropropane	200	ND
1,3-Dichloropropane	200	ND
2,2-Dichloropropane	200	ND
1,1-Dichloropropene	200	ND
Ethylbenzene	200	TBQ
Hexachlorobutadiene	500	ND
Isopropylbenzene	200	ND
p-Isopropyltoluene	200	465.
Methylene chloride	1000	ND
Naphthalene	1000	1,800.
n-Propylbenzene	200	200.
Styrene	200	ND
1,1,1,2-Tetrachloroethane	200	ND
1,1,2,2-Tetrachloroethane	200	ND
Tetrachloroethene	200	ND
Toluene	200	ND

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REF #: 83,538

Parameter	Detection Limit (ug/kg)	Concentration As Received (ug/kg)
1,2,3-Trichlorobenzene	200	ND
1,2,4-Trichlorobenzene	200	ND
1,1,1-Trichloroethane	200	ND
1,1,2-Trichloroethane	200	ND
Trichloroethene	200	ND
Trichlorofluoromethane	200	ND
1,2,3-Trichloropropane	200	ND
1,2,4-Trimethylbenzene	200	2,010.
1,3,5-Trimethylbenzene	200	915.
Vinyl chloride	1000	ND
Total Xylenes	200	691.
MTBE	500	ND

NUMBER OF UNIDENTIFIED PEAKS: >10[4]

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	94.%
Toluene-d8:	107.%
4-Bromofluorobenzene:	99.%

PERCENT SOLIDS: 75.%

Notes:

1 Detection limit raised due to high levels of contaminants. Sample run at a 10.% dilution.
2 None detected
3 Trace below quantitation limit
4 Unidentifed peaks consist of Aliphatic Hydrocarbons, Alkylated Benzenes and PAHs ranging from 200 - 2,500 ug/kg.

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CHAIN-OF-CUSTODY RECORD

17550

Project Name: AOT/Central Garage Site Location: Berlin, VT	Reporting Address: WHN	Billing Address: WHN
Endyne Project Number: HNCG 1144	Company: WHN Contact Name/Phone #: J. Noyes 6580820	Sampler Name: C. Aldrich Phone #: 6580820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
83538	WQ-2 (3.5'-4.0')	Soil	✓		11/29/95 11:00	2	40mL		8260, 8100 RCRA metals	4°C	

Relinquished by: Signature: Chris Aldrich	Received by: Signature: Ron Bean	Date/Time: 11/29/95 4:00 p.m.
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

ENDYNE, INC.

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Williston, Vermont 05495
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FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, & Noyes, Inc.
PROJECT NAME: AOT/Central Garage
DATE REPORTED: December 13, 1995
DATE SAMPLED: November 29, 1995

PROJECT CODE: HNCG1145
REF. # 83,539

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated proper sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT
EPA METHOD 8100 BY GC/MS

CLIENT: Wagner, Heindel, & Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 13, 1995
DATE SAMPLED: November 29, 1995
DATE RECEIVED: November 29, 1995
DATE EXTRACTED: December 5, 1995

PROJECT CODE: HNCG1145
ANALYSIS DATE: December 11, 1995
STATION: WQ-2 (3.5' - 4.0')
REF. #: 83,539
TIME SAMPLED: 11:00
SAMPLER: C. Aldrich

Parameter	Quantitation Limit (ug/kg)	Concentration as received(ug/kg)
Acenaphthene	50	208.
Acenaphthylene	50	109.
Anthracene	50	108.
Benzo(a)anthracene	50	523.
Benzo(b,k)fluoranthene	50	852.
Benzo(a)pyrene	50	359.
Benzo(g,h,i)perylene	50	455.
Chrysene	50	363.
Dibenzo(a,h)anthracene	50	151.
Dibenz(a,j)acridine	50	ND[1]
7,12-Dimethylbenz(a)anthracene	50	ND
Fluoranthene	50	710.
Fluorene	50	262.
Indeno(1,2,3-cd)pyrene	50	356.
3-Methylcholanthrene	50	ND
2-Methylnaphthalene	50	1,240.
Naphthalene	50	1,740.
Phenanthrene	50	1,030.
Pyrene	50	910.

NUMBER OF UNIDENTIFIED PEAKS: >10

Analytical Surrogate Recovery

Nitrobenzene-d 5:	18%
2-Fluorobiphenyl:	48%
Terphenyl-d 14:	37%

PERCENT SOLIDS: 75%

NOTES:

1 None detected

Williston ont 05
(802) 879-4333

Project Name: AOT/Central Garage Site Location: Berlin, VT	Reporting Address: WHW	Billing Address: WHW
Endyne Project Number: HNCG-1145	Company: WHW Contact Name/Phone #: J. Noyes 6580820	Sampler Name: C. Aldrich Phone #: 6580820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 11/29/95	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
83539	WQ-2 (3.5'-4.0')	Soil	✓		1100	2	40mL		8260, 8100 RCRA metals	4°C	

Relinquished by: Signature Chris Aldrich	Received by: Signature Ron Benn	Date/Time 11/29/95 4:00 p.m
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

ENDYNE, INC.

Laboratory Services

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: January 5, 1996
DATE SAMPLED: November 29, 1995

PROJECT CODE: HNCG3146
REF.#: 83,540

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Samples were not preserved.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: January 5, 1996
DATE SAMPLED: November 29, 1995
DATE RECEIVED: November 29, 1995

PROJECT CODE: HNCG3146
REF. #: 83,540
STATION: WQ-2(3.5-4.0)
TIME SAMPLED: 11:00
SAMPLER: Chris Aldrich

Digestion was performed by EPA Method 3050.

Parameter	Concentration (mg/kg, dry wt.)	Reporting Limit (mg/kg, dry wt.)	EPA Method	Analysis Date
Total Arsenic	27.5	0.211	7060	12/20/95
Total Barium	55.4	0.422	6010	12/13/95
Total Cadmium	0.870	0.211	6010	12/13/95
Total Chromium	31.7	0.422	6010	12/13/95
Total Lead	35.1	2.53	6010	12/14/95
Total Mercury	1.81	0.422	7471	1/4/96
Total Selenium	ND[1]	0.422	7740	12/19/95
Total Silver	ND	0.422	6010	12/13/95

NOTES:
1 None Detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

METALS LABORATORY REPORT

DUPLICATE CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: January 5, 1996
DATE SAMPLED: November 29, 1995
DATE RECEIVED: November 29, 1995

PROJECT CODE: HNCG3146
REF. #: 83,540
STATION: WQ-2(3.5-4.0)
TIME SAMPLED: 11:00
SAMPLER: Chris Aldrich

Parameter	Dup 1 (mg/kg, dry wt.)	Dup 2 (mg/kg, dry wt.)	Rel. % Diff.
Total Arsenic	34.7	20.3	29.
Total Barium	55.7	55.0	1.
Total Cadmium	0.858	0.883	3.
Total Chromium	31.9	31.6	1.
Total Lead	36.3	33.9	4.
Total Selenium	ND[1]	ND	ND
Total Silver	ND	ND	ND

NOTES:
1 None Detected.

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

METALS LABORATORY REPORT

SPIKE CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: January 5, 1996
DATE SAMPLED: November 29, 1995
DATE RECEIVED: November 29, 1995

PROJECT CODE: HNCG3146
REF. #: 83,540
STATION: WQ-2(3.5-4.0)
TIME SAMPLED: 11:00
SAMPLER: Chris Aldrich

Parameter	Concentration (mg/kg, dry wt.)	Target (mg/kg, dry wt.)	Spike Result (mg/kg, dry wt.)	% Rec.
Total Barium	55.7	16.9	71.3	92.
Total Cadmium	0.858	8.43	8.79	94.
Total Chromium	31.9	16.9	46.7	88.
Total Lead	36.3	16.9	51.4	89.
Total Silver	ND[1]	8.43	6.29	75.

NOTES:
1 None Detected

(802) 879-4333

Project Name: AOT/Central Garage Site Location: Berlin, VT	Reporting Address: WHW	Billing Address: WHW
Endyne Project Number: HNCG 3146	Company: WHW Contact Name/Phone #: J. Hayes 6580820	Sampler Name: C. Aldrich Phone #: 6580820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 11/29/95	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
83540	WQ-2 (3.5'-4.0')	Soil	✓		11⁰⁰	2	40mL		8260, 8100 RCRA metals	4°C	

Relinquished by: Signature Chris Aldrich	Received by: Signature Ron Bean	Date/Time 11/29/95 4:00 p.m
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 19, 1995
DATE SAMPLED: December 7, 1995

PROJECT CODE: HNAO1228
REF. #: 83,760 - 83,763

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated sample preservation with Sodium Azide.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 19, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995
ANALYSIS DATE: December 18, 1995

PROJECT CODE: HNAO1228
REF.#: 83,760
STATION: MW 1
TIME SAMPLED: 10:00
SAMPLER: Chris Aldrich

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	2	ND[1]
Bromobenzene	2	ND
Bromochloromethane	2	ND
Bromodichloromethane	2	ND
Bromoform	2	ND
Bromomethane	5	ND
n-Butylbenzene	2	ND
sec-Butylbenzene	2	ND
Carbon Tetrachloride	2	ND
Chlorobenzene	2	5.4
Chloroethane	5	ND
Chloroform	5	ND
Chloromethane	10	ND
2&4-Chlorotoluene	2	ND
Dibromochloromethane	2	ND
1,2-Dibromo-3-Chloropropane	2	ND
1,2-Dibromoethane	2	ND
Dibromomethane	2	ND

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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(802) 879-4333
FAX 879-7103

REF.#: 83,760

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
1,2-Dichlorobenzene	2	ND
1,3-Dichlorobenzene	2	ND
1,4-Dichlorobenzene	2	ND
Dichlorodifluoromethane	10	ND
1,1-Dichloroethane	2	ND
1,2-Dichloroethane	2	ND
1,1-Dichloroethene	2	ND
cis-1,2-Dichloroethene	2	ND
trans-1,2-Dichloroethene	2	ND
1,2-Dichloropropane	2	ND
1,3-Dichloropropane	2	ND
2,2-Dichloropropane	2	ND
1,1-Dichloropropene	2	ND
cis-1,3-Dichloropropene	2	ND
trans-1,3-Dichloropropene	2	ND
Ethylbenzene	2	ND
Hexachlorobutadiene	5	ND
Isopropylbenzene	2	ND
p-Isopropyltoluene	2	ND
Methylene Chloride	10	ND
Naphthalene	10	ND
n-Propylbenzene	2	ND
Styrene	2	ND
1,1,1,2-Tetrachloroethane	2	ND
1,1,2,2-Tetrachloroethane	2	ND
Tetrachloroethene	2	TBQ[2]

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FAX 879-7103

REF.#: 83,760

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Toluene	2	ND
1,2,3-Trichlorobenzene	2	ND
1,2,4-Trichlorobenzene	2	ND
1,1,1-Trichloroethane	2	ND
1,1,2-Trichloroethane	2	ND
Trichloroethene	2	ND
Trichlorofluoromethane	2	ND
1,2,3-Trichloropropane	2	ND
1,2,4-Trimethylbenzene	2	ND
1,3,5-Trimethylbenzene	2	2.1
Vinyl Chloride	10	ND
Total Xylenes	2	2.0
MTBE	5	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 9[3]

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 94.%
Toluene-d8 : 97.%
4-Bromofluorobenzene : 101.%

NOTES:

1 None detected
2 Trace below quantitation limit
3 Unidentified peaks in this sample consist of aliphatic hydrocarbons ranging from 2.0 to 5.0ug/L.

ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 19, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995
ANALYSIS DATE: December 19, 1995

PROJECT CODE: HNAO1228
REF.#: 83,761
STATION: MW 2
TIME SAMPLED: 10:15
SAMPLER: Chris Aldrich

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	2	TBQ[1]
Bromobenzene	2	ND[2]
Bromochloromethane	2	ND
Bromodichloromethane	2	ND
Bromoform	2	ND
Bromomethane	5	ND
n-Butylbenzene	2	ND
sec-Butylbenzene	2	ND
Carbon Tetrachloride	2	ND
Chlorobenzene	2	ND
Chloroethane	5	ND
Chloroform	5	ND
Chloromethane	10	ND
2&4-Chlorotoluene	2	ND
Dibromochloromethane	2	ND
1,2-Dibromo-3-Chloropropane	2	ND
1,2-Dibromoethane	2	ND
Dibromomethane	2	ND

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Laboratory Services

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FAX 879-7103

REF.#: 83,761

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
1,2-Dichlorobenzene	2	ND
1,3-Dichlorobenzene	2	ND
1,4-Dichlorobenzene	2	ND
Dichlorodifluoromethane	10	ND
1,1-Dichloroethane	2	ND
1,2-Dichloroethane	2	ND
1,1-Dichloroethene	2	ND
cis-1,2-Dichloroethene	2	ND
trans-1,2-Dichloroethene	2	ND
1,2-Dichloropropane	2	ND
1,3-Dichloropropane	2	ND
2,2-Dichloropropane	2	ND
1,1-Dichloropropene	2	ND
cis-1,3-Dichloropropene	2	ND
trans-1,3-Dichloropropene	2	ND
Ethylbenzene	2	ND
Hexachlorobutadiene	5	ND
Isopropylbenzene	2	ND
p-Isopropyltoluene	2	ND
Methylene Chloride	10	ND
Naphthalene	10	ND
n-Propylbenzene	2	ND
Styrene	2	ND
1,1,1,2-Tetrachloroethane	2	ND
1,1,2,2-Tetrachloroethane	2	ND
Tetrachloroethene	2	2.2

ENDYNE, INC.

Laboratory Services

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(802) 879-4333
FAX 879-7103

REF.#: 83,761

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Toluene	2	3.9
1,2,3-Trichlorobenzene	2	ND
1,2,4-Trichlorobenzene	2	ND
1,1,1-Trichloroethane	2	ND
1,1,2-Trichloroethane	2	ND
Trichloroethene	2	TBQ
Trichlorofluoromethane	2	ND
1,2,3-Trichloropropane	2	ND
1,2,4-Trimethylbenzene	2	ND
1,3,5-Trimethylbenzene	2	ND
Vinyl Chloride	10	ND
Total Xylenes	2	5.1
MTBE	5	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: $>10^3$

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 95.%
Toluene-d8 : 109.%
4-Bromofluorobenzene : 102.%

NOTES:

1 Trace below quantitation limit

2 None detected

3 Unidentified peaks in this sample consist of aliphatic hydrocarbons ranging from 2.0 to 10.0ug/L.

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 19, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995
ANALYSIS DATE: December 19, 1995

PROJECT CODE: HNAO1228
REF.#: 83,762
STATION: MW 3
TIME SAMPLED: 11:15
SAMPLER: Chris Aldrich

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	2	5.8
Bromobenzene	2	ND[1]
Bromochloromethane	2	ND
Bromodichloromethane	2	ND
Bromoform	2	ND
Bromomethane	5	ND
n-Butylbenzene	2	ND
sec-Butylbenzene	2	TBQ[2]
Carbon Tetrachloride	2	ND
Chlorobenzene	2	ND
Chloroethane	5	ND
Chloroform	5	ND
Chloromethane	10	ND
2&4-Chlorotoluene	2	ND
Dibromochloromethane	2	ND
1,2-Dibromo-3-Chloropropane	2	ND
1,2-Dibromoethane	2	ND
Dibromomethane	2	ND

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Laboratory Services

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FAX 879-7103

REF.#: 83,762

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
1,2-Dichlorobenzene	2	ND
1,3-Dichlorobenzene	2	ND
1,4-Dichlorobenzene	2	ND
Dichlorodifluoromethane	10	ND
1,1-Dichloroethane	2	ND
1,2-Dichloroethane	2	ND
1,1-Dichloroethene	2	ND
cis-1,2-Dichloroethene	2	ND
trans-1,2-Dichloroethene	2	ND
1,2-Dichloropropane	2	ND
1,3-Dichloropropane	2	ND
2,2-Dichloropropane	2	ND
1,1-Dichloropropene	2	ND
cis-1,3-Dichloropropene	2	ND
trans-1,3-Dichloropropene	2	ND
Ethylbenzene	2	15.3
Hexachlorobutadiene	5	ND
Isopropylbenzene	2	2.7
p-Isopropyltoluene	2	3.6
Methylene Chloride	10	ND
Naphthalene	10	42.4
n-Propylbenzene	2	6.0
Styrene	2	ND
1,1,1,2-Tetrachloroethane	2	ND
1,1,2,2-Tetrachloroethane	2	ND
Tetrachloroethene	2	ND

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REF.#: 83,762

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Toluene	2	10.8
1,2,3-Trichlorobenzene	2	ND
1,2,4-Trichlorobenzene	2	ND
1,1,1-Trichloroethane	2	ND
1,1,2-Trichloroethane	2	ND
Trichloroethene	2	ND
Trichlorofluoromethane	2	ND
1,2,3-Trichloropropane	2	ND
1,2,4-Trimethylbenzene	2	48.1
1,3,5-Trimethylbenzene	2	19.4
Vinyl Chloride	10	ND
Total Xylenes	2	84.4
MTBE	5	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: $>10^3$

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 99.%
Toluene-d8 : 102.%
4-Bromofluorobenzene : 100.%

NOTES:

1 None detected
2 Trace below quantitation limit
3 Unidentified peaks in this sample consist of alkylated benzenes and PAHs ranging from 2. to 100.ug/L.

ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 19, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995
ANALYSIS DATE: December 19, 1995

PROJECT CODE: HNAO1228
REF.#: 83,763
STATION: WQ 2
TIME SAMPLED: 11:00
SAMPLER: Chris Aldrich

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	2	63.4
Bromobenzene	2	ND[1]
Bromochloromethane	2	ND
Bromodichloromethane	2	ND
Bromoform	2	ND
Bromomethane	5	ND
n-Butylbenzene	2	ND
sec-Butylbenzene	2	3.3
Carbon Tetrachloride	2	ND
Chlorobenzene	2	ND
Chloroethane	5	ND
Chloroform	5	ND
Chloromethane	10	ND
2&4-Chlorotoluene	2	ND
Dibromochloromethane	2	ND
1,2-Dibromo-3-Chloropropane	2	ND
1,2-Dibromoethane	2	ND
Dibromomethane	2	ND

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REF.#: 83,763

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
1,2-Dichlorobenzene	2	ND
1,3-Dichlorobenzene	2	ND
1,4-Dichlorobenzene	2	ND
Dichlorodifluoromethane	10	ND
1,1-Dichloroethane	2	ND
1,2-Dichloroethane	2	ND
1,1-Dichloroethene	2	ND
cis-1,2-Dichloroethene	2	ND
trans-1,2-Dichloroethene	2	ND
1,2-Dichloropropane	2	ND
1,3-Dichloropropane	2	ND
2,2-Dichloropropane	2	ND
1,1-Dichloropropene	2	ND
cis-1,3-Dichloropropene	2	ND
trans-1,3-Dichloropropene	2	ND
Ethylbenzene	2	40.4
Hexachlorobutadiene	5	ND
Isopropylbenzene	2	6.3
p-Isopropyltoluene	2	9.5
Methylene Chloride	10	ND
Naphthalene	10	122.
n-Propylbenzene	2	11.1
Styrene	2	ND
1,1,1,2-Tetrachloroethane	2	ND
1,1,2,2-Tetrachloroethane	2	ND
Tetrachloroethene	2	ND

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REF.#: 83,763

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Toluene	2	8.4
1,2,3-Trichlorobenzene	2	ND
1,2,4-Trichlorobenzene	2	ND
1,1,1-Trichloroethane	2	ND
1,1,2-Trichloroethane	2	ND
Trichloroethene	2	ND
Trichlorofluoromethane	2	ND
1,2,3-Trichloropropane	2	ND
1,2,4-Trimethylbenzene	2	96.2
1,3,5-Trimethylbenzene	2	35.4
Vinyl Chloride	10	ND
Total Xylenes	2	155.
MTBE	5	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: $>10^2$

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 95.%
Toluene-d8 : 116.%
4-Bromofluorobenzene : 96.%

NOTES:

1 None detected

2 Unidentified peaks in this sample consist of alkylated benzenes and PAHs ranging from 2. to 100.ug/L.

ENDYNE, INC.

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CHAIN-OF-CUSTODY RECORD

17485

83,760 — 83,771

Project Name: AOT/Central Garage Site Location: Berlin, VT	Reporting Address: WHN	Billing Address: WHN
Endyne Project Number: HNAO1228	Company: WHN Contact Name/Phone #: J. Silfa 6580820	Sampler Name: Chris Aldrich Phone #: 6580820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 12/7/95	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
83,760	MW1	H_2O	✓		10⁰⁰	3	40mL		8260 +8100 most for TPH + fingerprint	NaN_3	
83,761	mw 2				10¹⁵						
83,762	mw3				11¹⁵						
83,763	wa2				11⁰⁰						
	mw 1				10⁰⁰	1	160z		30	4°	
	mw 2				10¹⁵						
	mw 3				11¹⁵						
	WQ-2				11⁰⁰						

Relinquished by: Signature Chris Aldrich	Received by: Signature Louis M. Chambers	Date/Time 12-7-95 12:45
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): 8 RCRA metals										

ENDYNE, INC.

Laboratory Services

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, & Noyes, Inc.
PROJECT NAME: AOT/Central Garage
DATE REPORTED: December 22, 1995
DATE SAMPLED: December 7, 1995

PROJECT CODE: HNAO1229
REF. #: 83,764 - 83,767

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with Sodium Azide.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

for

Harry B. Locker, Ph.D.
Laboratory Director

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Laboratory Services

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: December 22, 1995
CLIENT: Wagner, Heindel, & Noyes, Inc.
PROJECT: AOT/Central Garage
PROJECT CODE: HNAO1229
COLLECTED BY: Chris Aldrich
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

Reference #	Sample ID	Concentration (mg/L)[1]
83,764	MW1; 10:00	ND[2]
83,765	MW2; 10:15	TBQ[3]
83,766	MW3: 11:15	TBQ
83,767	WQ2; 11:00	1.9

Notes:

1 Method detection limit is 1.0 mg/L.
2 None detected
3 Trace below quantitation limit

p.30

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CHAIN-OF-CUSTODY RECORD

Project Name: AOT/Central Garage Site Location: Berlin, VT	Reporting Address: WHN	Billing Address: WHN
Endyne Project Number: WNAO1729	Company: WHN Contact Name/Phone #: J. Sifka 6580820	Sampler Name: Chris Aldrich Phone #: 6580820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 12/7/95	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
83,764	MW1	H_2O	✓		10⁰⁰	3	40mL		8260 + 8100	NaN_3	
83,765	MW 2				10¹⁵						
83,766	MW3				11¹⁵						
83,767	WQ2				11⁰⁰						
	MW 1				10⁰⁰	1	16oz		30	4°	
	MW 2				10¹⁵						
	MW 3				11¹⁵						
	WQ-2				11⁰⁰						

Relinquished by: Signature Chris Aldrich	Received by: Signature Lori M. Chambers	Date/Time 12-7-95 12:45
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
(30)	Other (Specify): 8 RCRA metals										

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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995

PROJECT CODE: HNAO3230
REF.#: 83,768 - 83,771

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Metals preservation with HNO_3 was performed at the laboratory.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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ENDYNE, INC.

Laboratory Services

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FAX 879-7103

LABORATORY REPORT

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

PROJECT CODE: HNAO3230
REF. #: 83,768
STATION: MW1
TIME SAMPLED: 10:00
SAMPLER: Chris Aldrich

Digestion was performed by EPA Method 3010/3020.

Parameter	Concentration (mg/L, ppm)	Reporting Limit (mg/L, ppm)	EPA Method	Analysis Date
Total Arsenic	ND[1]	0.005	7060	12/12/95
Total Barium	0.090	0.010	6010	12/14/95
Total Cadmium	ND	0.005	6010	12/14/95
Total Chromium	ND	0.010	6010	12/14/95
Total Lead	0.002	0.002	7421	12/14/95
Total Mercury	ND	0.001	7470	12/14/95
Total Selenium	ND	0.010	7730	12/19/95
Total Silver	ND	0.010	6010	12/14/95

NOTES:
1 None Detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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METALS LABORATORY REPORT

DUPLICATE CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

PROJECT CODE: HNAO3230
REF. #: 83,768
STATION: MW1
TIME SAMPLED: 10:00
SAMPLER: Chris Aldrich

Parameter	Dup 1 (mg/L)	Dup 2 (mg/L)	Rel. % Diff.
Total Arsenic	ND[1]	ND	ND
Total Barium	0.097	0.084	14.
Total Cadmium	ND	ND	ND
Total Chromium	ND	ND	ND
Total Lead	0.002	TBQ[2]	1.
Total Mercury	ND	ND	ND
Total Selenium	ND	ND	ND
Total Silver	ND	ND	ND

NOTES:

1 None Detected

2 Trace below quantitation limit

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

PROJECT CODE: HNAO3230
REF. #: 83,769
STATION: MW2
TIME SAMPLED: 10:15
SAMPLER: Chris Aldrich

Digestion was performed by EPA Method 3010/3020.

Parameter	Concentration (mg/L, ppm)	Reporting Limit (mg/L, ppm)	EPA Method	Analysis Date
Total Arsenic	ND[1]	0.005	7060	12/12/95
Total Barium	0.133	0.010	6010	12/14/95
Total Cadmium	ND	0.005	6010	12/14/95
Total Chromium	ND	0.010	6010	12/14/95
Total Lead	0.009	0.002	7421	12/14/95
Total Mercury	ND	0.001	7470	12/14/95
Total Selenium	ND	0.010	7730	12/19/95
Total Silver	ND	0.010	6010	12/14/95

NOTES:
1 None Detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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FAX 879-7103

METALS LABORATORY REPORT

SPIKE CONTROL DATA

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

PROJECT CODE: HNAO3230
REF. #: 83,769
STATION: MW2
TIME SAMPLED: 10:15
SAMPLER: Chris Aldrich

Parameter	Concentration (mg/L)	Target (mg/L)	Spike Result (mg/L)	% Rec.
Total Arsenic	ND[1]	0.020	0.019	94.
Total Barium	0.133	0.400	0.534	100.
Total Cadmium	ND	0.200	0.198	99.
Total Chromium	ND	0.400	0.410	103.
Total Mercury	ND	0.005	0.006	110.
Total Silver	ND	0.200	0.186	93.

NOTES:
1 None Detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

PROJECT CODE: HNAO3230
REF. #: 83,770
STATION: MW3
TIME SAMPLED: 11:15
SAMPLER: Chris Aldrich

Digestion was performed by EPA Method 3010/3020.

Parameter	Concentration (mg/L, ppm)	Reporting Limit (mg/L, ppm)	EPA Method	Analysis Date
Total Arsenic	ND[1]	0.005	7060	12/12/95
Total Barium	0.123	0.010	6010	12/14/95
Total Cadmium	ND	0.005	6010	12/14/95
Total Chromium	ND	0.010	6010	12/14/95
Total Lead	ND	0.002	7421	12/14/95
Total Mercury	ND	0.001	7470	12/14/95
Total Selenium	ND	0.010	7730	12/19/95
Total Silver	ND	0.010	6010	12/14/95

NOTES:
1 None Detected

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: AOT/Central Garage
REPORT DATE: December 28, 1995
DATE SAMPLED: December 7, 1995
DATE RECEIVED: December 7, 1995

PROJECT CODE: HNAO3230
REF. #: 83,771
STATION: WQ2
TIME SAMPLED: 11:00
SAMPLER: Chris Aldrich

Digestion was performed by EPA Method 3010/3020.

Parameter	Concentration (mg/L, ppm)	Reporting Limit (mg/L, ppm)	EPA Method	Analysis Date
Total Arsenic	0.010	0.005	7060	12/12/95
Total Barium	0.162	0.010	6010	12/14/95
Total Cadmium	ND[1]	0.005	6010	12/14/95
Total Chromium	ND	0.010	6010	12/14/95
Total Lead	0.003	0.002	7421	12/14/95
Total Mercury	ND	0.001	7470	12/14/95
Total Selenium	ND	0.010	7730	12/19/95
Total Silver	ND	0.010	6010	12/14/95

NOTES:
1 None Detected

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CHAIN-OF-CUSTODY RECORD

Project Name: AOT/Central Garage Site Location: Berlin, VT	Reporting Address: WHW	Billing Address: WHW
Endyne Project Number: HNA03280	Company: WHW Contact Name/Phone #: J. Silfa 6580820	Sampler Name: Chris Aldrich Phone #: 6580820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 12/7/95	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	MW 1	H_2O	✓		10⁰⁰	3	40mL		8260 + 8100 mod for TPH + Fingerprint	NaN_3	
	mw 2	↓	↓		10¹⁵	↓	↓		↓	↓	
	mw3				11¹⁵						
	WQ2				11⁰⁰	↓	↓			↓	
83,768	mw 1				10⁰⁰	1	160z		30	4°	
83,769	mw 2				10¹⁵	↓	↓		↓	↓	
83,770	mw3				11¹⁵						
83,771	WQ-2	↓	↓		11⁰⁰	↓	↓		↓	↓	

Relinquished by: Signature: Chris Aldrich	Received by: Signature: Boris M. Chambers	Date/Time 12-7-95 12:45
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
(30)	Other (Specify): 8 RCRA metals										